

### Abstract of the Disclosure

An LU decomposition is carried out on a block E and H. Then, a block B is updated using an upper  
5 triangular portion of the block E, and a block D is updated using a lower triangular portion of the block E. At this time, in an LU decomposition, blocks F and I have been updated. Then, using the blocks B, D, F, and H, blocks A, C, G, and I are  
10 updated, an upper triangular portion of the block E is updated, and finally, the blocks D and F are updated. Then, the second updating process is performed on the block E. Using the result of the process, the blocks B and H are updated. Finally,  
15 the block E is updated, and the pivot interchanging process is completed, thereby terminating the process. These processes on the blocks are performed in a plurality of divided threads in parallel.